

Supplement No. 2 to the Environmental Assessment

FY 2005-2009 MAINTENANCE DREDGING, SNOHOMISH RIVER NAVIGATION CHANNEL, DOWNSTREAM AND UPSTREAM SETTLING BASINS, EVERETT, WASHINGTON



October 26, 2007



**US Army Corps
of Engineers®**
Seattle District

Supplement Number Two to the Environmental Assessment

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DOWNSTREAM AND UPSTREAM SETTLING BASINS

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Executive Summary

Responsible Agency: U.S. Army Corps of Engineers, Seattle District (Corps)

Summary: In accordance with the National Environmental Policy Act (NEPA), this document evaluates the potential environmental impacts of placing sediment dredged from the navigation channel, and downstream and upstream settling basins, of the Snohomish River Navigation Channel onto Parcel O, formerly known as the Kimberly Clark log yard site for the fiscal year 2008. Parcel O is owned by the City of Everett and dredged material placed there is destined for beneficial use by the City. This document supplements, and incorporates by reference, two documents: (1) the *FY 2005-2009 Maintenance Dredging, Snohomish River Navigation Channel, Downstream and Upstream Settling Basins, Everett Washington Final Environmental Assessment*, prepared in September 2004 by the Corps of Engineers, and (2) the *FY 2007 Jetty Island Re-nourishment, Snohomish River Federal Navigation Channel, Supplemental Environmental Assessment*, prepared by the Corps of Engineers in December 2006.

Impacts from the use of this additional upland disposal alternative should not be significant, either individually or cumulatively. The environmental effects of dredging the navigational channel and downstream and upstream settling basins has already been fully evaluated in the 2004 EA, including the impacts of dredging and disposal on water quality, riverine impacts, and benthic riverine habitat for benthic invertebrates and fish. Return water from the Parcel O disposal site to the Snohomish River will have reduced levels of turbidity due to containment in site settling ponds and will not substantively impact river water quality.

Placement of sediment on 9 acres at Parcel O will include placement on four small freshwater wetlands, covering an area of about 1.7 acres that formed on top of previously placed dredged material. Field evaluation of these wetlands indicated they are of low quality in terms of functionality. Compensatory mitigation will involve the improvement of functions and values of a riparian portion of the 200-foot shoreline buffer of the Snohomish River across the river from the disposal site and the wetland buffer of the Aeration Cell wetland at the City's wastewater treatment facility on Smith Island also across the river from the project site.

Relative to listed species, the biological assessment prepared in 2004 and supplemented in 2006 indicated that dredging and disposal operations from FY 2005-2009 would not be likely to affect listed species. The Corps recently prepared analyses of potential effects to listed species under the jurisdiction of NMFS and USFWS that could result from the planned disposal at Parcel O. These analyses determined that these operations are “not likely to adversely affect” Puget Sound Chinook salmon, Puget Sound steelhead, coastal/Puget Sound bull trout and the marbled murrelet. Further, they are “not likely to adversely affect” designated critical habitat for bull trout, southern resident killer whales or Steller’s sea lions. NMFS and USFWS concurred with these determinations. The Corps also analyzed potential effects on steelhead from the dredging operation and disposal alternatives, generally, as this species was listed in 2007 and not addressed in earlier consultations. NMFS also concurred with the determination of “not likely to adversely affect.”

Beneficial use of the dredged sediments will have positive effects by providing clean fill for redevelopment of a formerly contaminated industrial site owned by the City of Everett approximately one mile upstream from Parcel O.

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1.0 INTRODUCTION, PROJECT PURPOSE AND NEED

In accordance with the National Environmental Policy Act (NEPA), this document evaluates the potential environmental impacts of placing material derived from dredging the navigation channel, and downstream and upstream settling basins, onto Parcel O, formerly known as the Kimberly Clark log yard site during the fiscal years 2005-2009. Parcel O is owned by the City of Everett. This dredging project is a joint effort by the Corps and the Port of Everett. The Corps is responsible for dredging the federal navigation channel, the Port (as local partner with the Corps) is responsible for disposal of the sediments; in the case of disposal at Parcel O, the City of Everett provides the disposal site.

This document supplements, and incorporates by reference, the *FY 2005-2009 Maintenance Dredging, Snohomish River Navigation Channel, Downstream and Upstream Settling Basins, Everett Washington Final Environmental Assessment*, prepared in September 2004 by the Corps of Engineers. This document also incorporates by reference the entirety of the first supplement to the EA: the *FY 2007 Jetty Island Re-nourishment, Snohomish River Federal Navigation Channel, Supplemental Environmental Assessment*, prepared by the Corps of Engineers in December 2006. For a discussion of the general project area in the lower Snohomish River, refer to the Corps' 2004 environmental assessment (EA) (Corps of Engineers, 2004). The EA is available online at: <http://www.nws.usace.army.mil/ers/envirodocs.html>.

The 2004 EA evaluated the potential impacts of conducting maintenance dredging of the downstream and upstream settling basins and adjacent portions of the navigation channel within the lower Snohomish River in alternating years. The EA also evaluated the impacts of disposal of the dredged material at several possible sites including beneficial use of the sediments at the Port of Everett Riverside Business Park site and at several previously used upland sites along the lower Snohomish River including the Parcel O and Langus Riverfront Park Rehandling site. However, the EA stated that if these previously used sites were pursued during the 2006-2009 time period, they would need more detailed evaluation in an EA supplement. The EA concluded that the project was not a major Federal action significantly affecting the quality of the human environment, and therefore did not require preparation of an environmental impact statement. The 2007 EA supplement evaluated the potential environmental impacts of the placement of dredged material onto Jetty Island for fiscal year 2007.

Without annual maintenance dredging, shoaling would lead to a shallower navigation channel and would reduce the depth of the settling basins, thus reducing the ability of large ships to enter and leave the Port of Everett safely and increasing the need for harbor dredging.

In accordance with the National Environmental Policy Act (NEPA), this supplement (Number Two) evaluates the potential environmental impacts of disposal of dredged material at the Kimberly Clark Log Yard (parcel O) site. The supplement focuses primarily on impacts to Parcel O wetlands, mitigation for these wetland impacts, Snohomish River water quality as a result of site runoff, and additional riparian mitigation. It also focuses on recent correspondence between the Corps and the Services regarding Section 7 consultations and results pertaining to

the following issues: the effects on listed species and designated critical habitat generally of disposal at Parcel O, and the effects of the various dredging operations and the various aquatic and upland disposal alternatives on the recently listed steelhead trout. (*Oncorhynchus mykiss*).

2.0 PROJECT DESCRIPTION

Parcel O was formerly the site of a log yard storage area for the Kimberly Clark Corporation in Everett, Washington. The site is located approximately 0.3 miles upstream of the upstream settling basin along the west shoreline of the Snohomish River. The portion of the site designated to receive the dredged sediments, the dredged material “cell”, encompasses approximately 9 acres of the property and is located at the property’s southeastern corner just west of the confluence of Steamboat and Union Sloughs with the Snohomish River (Figure 1). The shoreline is armored with log piles and fringed with mudflat. Site vegetation, including wetlands, is described later in this environmental supplement. Over the last 20 years, approximately 466,000 cubic yards of dredged material has been placed on the site, with the last placement occurring in 1996.

From Section 3.1 in the 2004 EA, the proposed action includes dredging and disposal operations to be performed over a five year time period, extending between fiscal years 2005 and 2009. Both the downstream and upstream settling basins and adjacent upstream portions of the navigation channel would be dredged in fiscal year 2005. Dredging activities would then alternate between the downstream and upstream basins (and their associated portions of the navigation channel) every other year thereafter for the duration of this proposal (i.e. the downstream basin in 2006 and 2008; the upstream basin in 2007 and 2009). Subsequent EA sections describe in detail the planned dredging of the downstream and upstream settling basins in FY2005, including the plan for beneficial use through redevelopment of the Riverside Business Park site (immediately downstream of Parcel O) by directly placing sediment onto the site. The upstream settling basin would be dredged by hydraulic pipeline dredge that allows for direct placement of the dredged material onto uplands within an approximately one-mile radius of the dredging location. The upstream basin would be dredged to an authorized depth of up to -40 feet, MLLW, with an allowable over-depth of two feet below the required dredge depth (i.e. to -42 feet MLLW. This area encompasses approximately 3,500 linear feet of channel. The portion of the channel just upstream of the upstream settling basin would be dredged to a required depth of -8 feet MLLW with an allowable overdepth of two feet below the required dredge depth.

The 2004 EA also describes dredging in FY2006 through 2009. Total volumes to be dredged would not exceed the permitted maximum of 800,000 cubic yards from the upstream settling basin, 500,000 cubic yards from the downstream settling basin, and 200,000 cubic yards from the navigation channel. Dredging conducted during this period would be performed only between October 16 and February 14 of each fiscal year in order to minimize disturbances to migrating and juvenile salmonids.

Preferential disposal options would be beneficial use over open water disposal. Hydraulic dredging would be used if beneficial use sites on Jetty Island or at previously utilized upland



Figure 1. The planned dredged material disposal site at the Parcel O site (formerly the Kimberly Clark site). The area to be dredged is immediately north and northeast of Parcel O.

sites such as the Kimberly Clark Log Yard site (now Parcel O) are available and the shoaled sediments are of appropriate size and quality. Hydraulic dredging would be used to directly place dredged sediments from either the upstream or downstream settling basins onto these beneficial use sites. If capping material for the PSR Superfund site were still needed, sediment would be dredged using clamshell equipment and the material transported to the PSR site by bottom-dump barge. Any sediment not usable at the upland sites or for capping the PRS Superfund site would likely be clamshell dredged and transported to the PSSDA (Puget Sound Dredged Disposal Analysis) open water disposal site in Port Gardner Bay and disposed of by bottom-dump barge.

The 2004 EA evaluates several disposal alternatives, including disposal at the Port Gardner PSDDA site, disposal at the Pacific Sound Resources Superfund site in Elliott Bay, disposal at the Riverside Business Park Site, re-nourishment of the Jetty Island Berm and potential beneficial uses at other upland sites. Relative to the latter, the EA states that if sediments are needed for the various upland disposal sites on the lower river (including the Riverfront Park Rehandling Site and the Kimberly Clark Log Yard Site (Parcel O) between FY 2006 and 2009, the upstream settling basin and/or the portion of the navigation channel just upstream of that basin could be dredged by hydraulic pipeline dredge and the sediments directly placed at one or more of these upland sites. The decision to hydraulically dredge and beneficially use the material would be based on a determination that a need exists for renourishment/upland placement and suitable material is available based on annual condition surveys within the navigation channel and settling basins.

Sediment would likely be transferred to the site by laying the pipeline to the site, in a manner similar to previous sediment placements, including detailed consultation with USFWS and NOAA Fisheries regarding extent, elevation, timing, and methods of placement. As during previous placements at these sites, care would be taken during placement of the pipeline and operation of the construction equipment to minimize impacts to existing intertidal and upland vegetation to the greatest extent feasible.

Material will be hydraulically dredged from the navigation project and transported to the Parcel O site (River Mile 6) via a hydraulic pipeline that will extend upstream from the upper settling basin along the left bank river channel and then up and over log pilings and riparian berm and onto the Parcel O site. Location and placement of the pipeline will be conducted in a manner similar to the previous sediment placements at the Parcel O and Riverside Business Park sites. Great care will be taken during placement of the pipeline to minimize impacts to riparian vegetation along the shoreline.

Initial action at the disposal site will be to use existing onsite materials to rebuild the remnants of the last sediment disposal dike system. The dike will be raised to a sufficient elevation to contain the initial phase of the dredging and to focus supernatant water to an outfall on the eastern portion of the site.

As dredging begins and material accumulates on the site, the dikes will be progressively elevated using primarily clean dredged material to contain the material produced as dredging proceeds. Dikes may also be moved outward to the maximum extent of the site if initial dikes did not encompass the entire site. Heavy equipment such as bulldozers and/or excavators will be used within the dikes to distribute material settling from the slurry produced by the dredge and to

shape the new dikes. Up to 200,000 cubic yards will be placed at the site. Based on a storage area within the dikes of approximately 9 acres, this will result in an accumulation approximately 13.5 feet in depth.

The dredged material “cell” will slope gradually downward to the northeast to slowly move supernatant water towards the river return point after the majority of the transported sediments have settled out. Once the coarser sediment settles out of the water/sediment slurry, the water will pass through a final ponded area to maximize settling out of the finer materials. Holding time in the slurry within the cell will be regulated through a weir system by adding boards to the weir until turbidity levels have been decreased sufficiently to meet State water quality conditions for suspended solids. The discharge point will be at the far eastern end of the property. An energy dissipation structure will be provided to minimize erosion of the existing riverbank or bed by the discharge. It is expected that this structure will consist of a channel lined with coarse rock.

3.0 DREDGING AND DISPOSAL ALTERNATIVES.

Three general dredging alternatives were evaluated in Section 2 of the 2004 EA. The preferred alternative was to dredge the navigation channel and settling basins in alternate years, primarily due to the fact that this alternative was considered the least environmentally damaging alternative that would meet the basic project purpose of maintaining safe and reliable navigation in the lower Snohomish River (Corps of Engineers, 2004).

The 2004 EA evaluated a number of aquatic and shoreside disposal options. Of the upland disposal alternatives evaluated in the 2004 EA, the Kimberly Clark Log Yard (Parcel O) alternative was only briefly addressed in Section 3.2.5, “Potential Beneficial Use at Other Upland Sites”. Of the upland disposal site options, only the Riverside Business Park site was described in detail, and Jetty Island disposal was addressed in the first Supplement. This Supplement No. 2 expands on the general discussion of disposal alternatives, in order to encompass a full evaluation of the added disposal alternative at Parcel O.

4.0 EXISTING CONDITIONS.

4.1 General.

Existing conditions regarding the locations of dredging operations in the navigation channel, and the upstream and downstream settling basins, were discussed in the 2004 EA and are hereby incorporated by reference. Existing conditions pertaining to the various aquatic and upland disposal alternatives were similarly discussed in the 2004 EA and the first Supplement to that EA.

Existing conditions regarding pertinent parameters in the vicinity of Parcel O are well described in the Corps’ EA (Corps of Engineers, 2004). Parameters addressed include riverine physical characteristics, water and sediment quality, aquatic invertebrates, fish and wildlife, threatened and endangered species, cultural resources and Native American concerns, land use, air quality, noise, and navigation. As stated previously, this information is incorporated by reference.

However, as the 2004 EA contains virtually no vegetative information on the Parcel O site, this Supplement Number Two focuses on the wetland, riparian and upland vegetation found there and impacts to this vegetation. The following discussion on Parcel O vegetation is taken from the report prepared for the Port of Everett by Hart Crowser-Pentec Environmental in July, 2007.

4.2 Vegetation.

Parcel O is currently undeveloped. It was last used in the mid-1990s for the placement of dredged material from the main Snohomish River channel. (NOTE: In May 2007 the Corps determined that it would not exert jurisdiction over the Parcel O wetlands primarily because they had developed on previously placed dredged material.)

A majority of the Parcel O shoreline has been altered over time as a result of past industrial activities. The shoreline presently is steep and partially rip-rapped. Dominant vegetation consists of Himalayan blackberry (Rubus armeniacus), reed canarygrass (Phalaris arundinacea), red elderberry (Sambucus racemosa), and a variety of weedy herbaceous species (Hart Crowser-Pentec Environmental, 2007a). Small patches of black cottonwood (Populus balsamifera) are also present throughout the property. Four wetland areas (A,B,C,D) are present on Parcel O, within the northeastern, western and southwestern portions of the property (Figure 2) (Hart Crowser-Pentec Environmental, 2007a).

4.3 Wetland Delineation.

Wetland A is a flat wetland 1.01 acres in size. It is bounded by the toe of concrete remnants left on the property, the toe of an upland mound, and slight topographic changes. Wetlands B, C, and D are depositional wetlands. Wetland B is 0.2 acres in size and is associated with a drainage ditch located near the northern property boundary. Wetland C is 0.42 acres in size and is in a depressional area adjacent to a berm and a soil storage area. Wetland D is 0.08 acres in size and corresponds with the edge of a main access road around the outer portion of Parcel O (**Figure 2**). In total, this project will result in the filling of 1.72 acres of wetlands.

4.4 Wetland Classification and Functional Analysis.

Wetlands A, B, C, and D are palustrine emergent non-persistent seasonally flooded wetlands. Wetland A is functionally a flats wetland containing an emergent plant community class. Wetland B is functionally a depressional wetland containing scrub/shrub and emergent plant community classes. Wetlands C and D are functionally depressional wetlands containing emergent community classes (Hart Crowser-Pentec Environmental, 2007a).

4.5 Wetland Rating.

In accordance with the Washington State Wetland Rating System for Western Washington – Revised (Hruby 2004), all four wetlands are depressional wetlands that are seasonally flooded and rated as Category IV wetlands (Hart Crowser-Pentec Environmental, 2007a).

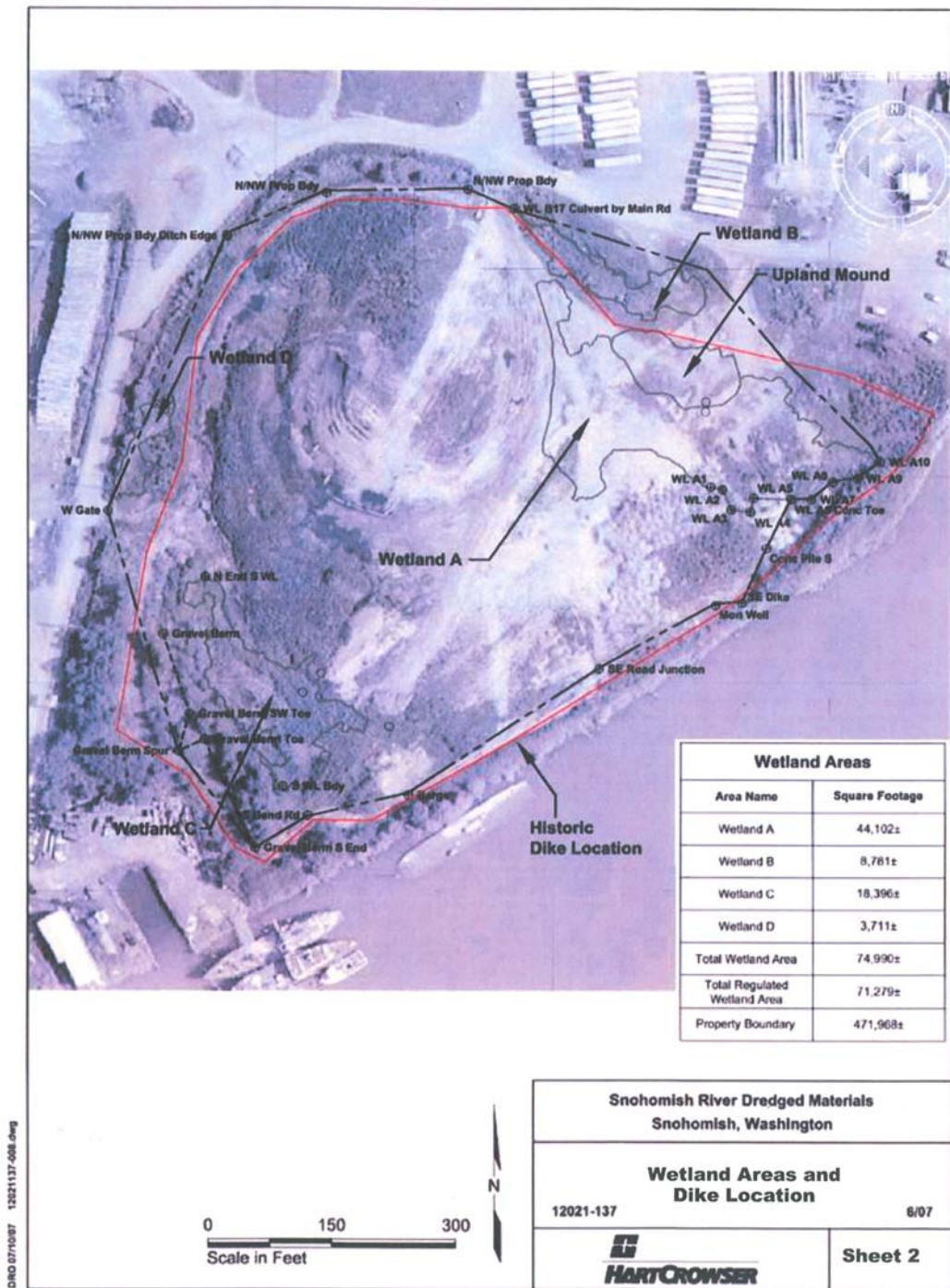


Figure 2. Wetland areas (A-D) at Parcel O. Also shown is the historic dike location.

Wetland A provides a low level of function. It contains a dominance of invasive vegetation, one vegetation class, no obligate plant species, and no habitat features. The buffer condition is disturbed and the wetland is isolated from upland habitats.

Wetland B provides a low to moderate level of function. It contains a dominance of native vegetation, two vegetation classes, no obligate plant species, and no habitat features. The buffer condition is disturbed and the wetland is isolated from upland habitats.

Wetland C provides a low level of function. It contains a dominance of invasive vegetation, one vegetation class, no obligate plant species, and no habitat features. The buffer condition is disturbed and the wetland is isolated from upland habitats.

Wetland D provides a low level of function. It contains a mixture of native and invasive vegetation, one vegetation class, no obligate plant species, and no habitat features. The buffer condition is disturbed and the wetland is isolated from upland habitats.

4.6 Steelhead Trout (Oncorhynchus mykiss)

The present distribution of steelhead extends from Kamchatka in Asia, east to Alaska, and extending south along the Pacific Coast to the U.S. Mexico border. Steelhead that are anadromous can spend up to seven years in freshwater prior to smoltification and then three years in salt water prior to first spawning. Steelhead are iteroparous (spawn more than once) whereas the Pacific salmon is semelparous (spawn once and die).

Within the Snohomish and Puget Sound basins, steelhead can be divided into two basic reproductive ecotypes, based on the state of sexual maturity at the time of river entry. The summer-run steelhead is a stream maturing fish that enters freshwater in a sexually immature condition between May and October, and requires several months to mature and spawn. The winter-run steelhead is an ocean maturing fish that enters freshwater between November and April with well-developed gonads and spawns shortly after entrance. In basins with both summer and winter steelhead runs, the summer run generally occurs where habitat is not fully utilized by the winter run, or where an ephemeral hydrologic barrier separates them such as a seasonal velocity barrier or at a waterfall. Summer-run steelhead usually spawn farther upstream than winter run.

Summer-run and winter-run steelhead stocks are present in the Snohomish basin and both summer and winter fish are composed of wild and hatchery-raised steelhead. The winter-run is the larger of the two stocks. Three wild winter steelhead stocks have been identified—Snohomish/Skykomish, Snoqualmie, and Pilchuck Rivers. Wild winter-run fish run predominantly in the late winter through spring (February through April), while hatchery fish run from the late-fall through early winter (mid-November through mid-February). Spawning occurs through most of this entire winter/spring period. The escapement goal for Snohomish basin wild winter steelhead is 6,500 fish; Table 3 presents escapement numbers from 1981 through 2006. The average escapement for this period is 5,649 fish with escapement goals being met over only eight of the 23 years that data were collected.

Three summer steelhead stocks are present in the Snohomish basin—upper Tolt, North Fork Skykomish, and South Fork Skykomish. The summer steelhead in the Tolt and North Fork Skykomish are native and the South Fork Skykomish summer steelhead stock was developed by colonization of non-native fish. Native summer stocks are small runs of fish limited by their habitats, spawning in areas isolated by native winter stocks. This occurs upstream of falls that were probably once migration barriers except during the low flows of summer and fall. Since only a few miles of stream are used for spawning, native summer steelhead populations are small. Total populations are not known and data are not sufficient to set escapement goals.

Wild juveniles typically spend two full years in freshwater before outmigrating during the spring. Because of the larger size at outmigration, steelhead do not typically spend a large amount of time in the nearshore, rather they tend to quickly outmigrate to open water.

5.0 ENVIRONMENTAL IMPACTS OF DREDGING AND DISPOSAL AT PARCEL O

5.1 General.

Impacts of hydraulic dredging in the lower Snohomish River on aquatic resources, cultural resources, land use, recreational use, air quality, noise, transportation & navigation, and aesthetics are well described in the Corps' 2004 EA. This supplement focuses on impacts on local water quality from the resultant water return from Parcel O, on listed species and habitat effects, and on riparian vegetation and wetlands at Parcel O. Environmental impacts of Snohomish River dredging operations and various aquatic and upland disposal alternatives on threatened and endangered species are well described in the biological evaluation prepared for the Port of Everett and Corps of Engineers (Hart Crowser-Pentec Environmental, 2007b). This Supplement No. 2 also focuses on the effects of dredging and disposal on the recently listed steelhead.

5.2 Water quality.

Water quality impacts resulting from dredging and disposal operations in the Snohomish River are well described in the Corps' 2004 EA (Corps of Engineers, 2004). Temporary increases in turbidity and decreases in dissolved oxygen are expected during hydraulic dredging of the settling basins and channel. The mixing zone for hydraulic dredging in the project area is 300 feet downcurrent of the point of dredging. The Corps will conduct water quality monitoring during dredging operations according to Ecology's Water Quality Certification and the Corps' water quality monitoring plan. Any exceedances in water quality standards will result in corrective action depending on the degree of the exceedance and/or the risk posed by the exceedance to beneficial uses of the river.

Relative to the disposal site, an erosion and sedimentation control plan (TESCP) will be prepared by the Port and necessary controls will be installed prior to any grading activity on the site in accordance with City of Everett requirements. Supernatant water from the dredged material will be retained in a ponded area near the discharge point for a duration sufficient to meet applicable water quality standards at the boundary of an allowed mixing zone. The resulting discharge of

water from the ponded area will cause minor temporary and localized impacts to water quality in the immediate discharge area. Localized turbidity plumes are expected to dissipate rapidly in tidal/riverine currents present in the area. The discharge water is expected to meet the required conditions of Ecology's 401 Water Quality Certification.

The Corps will also conduct water quality monitoring during upland disposal and return water periods according to Ecology's Water Quality Certification and the Corps' water quality monitoring plan. According to the certification, the goal is to ensure that State water quality conditions for turbidity and dissolved oxygen are met within the appropriate mixing zone of 600 feet downstream from the point of discharge. Also, best management practices will be implemented. The outfall will be located so as to provide the maximum amount of dilution or dispersion of the effluent and to minimize any potential scour or erosion effects to more sensitive aquatic resources. And, to the greatest extent practicable, the Parcel O site will be stabilized to prevent significant offsite erosion of dredged material by either water or wind transport.

5.3 Wetlands and Riparian Vegetation.

Riparian areas that will be impacted by dike construction and pipeline installation consist of non-native invasive shrubs that nonetheless provide some riparian functions (shading, leaf litter, insect fallout). These areas will be quickly recolonized following completion of the disposal operations by similar species providing similar functions. The four low quality wetlands on Parcel O, covering a total of 1.71 acres, will be covered by dredged material, thereby eliminating the marginal functions that these wetlands presently perform. These wetlands have formed since the last disposal action on this site in the mid-1990s.

5.4 Steelhead trout (Oncorhynchus mykiss).

Young steelhead which may be in the lower Snohomish River during the period of the dredging operations are likely to avoid the area of the dredge and its zone of temporarily increased turbidity. Even if a cutterhead dredge is used, two-year old steelhead are mobile enough that they are expected to avoid the dredging area (because of both turbidity and noise) by seeking refuge over the shallow intertidal areas along either side of the navigation channel and settling basins. Foraging habitat, such as these intertidal areas, would not be affected by the dredging. Populations of prey important to steelhead (invertebrates and forage fish) are unlikely to be affected by the proposed dredging and disposal operations. The temporary loss of the benthic and forage fish communities during dredging is expected to have a negligible effect on long-term habitat quality within the action area. Overall, the effects of the proposed action would be insignificant and discountable due to the temporary duration of the dredging activities and the implementation of the proposed conservation measures (see below) to minimize the potential for salmonids to be within the action area during dredging.

Conservation Measures. Conservation measures, including the dredging scheduling and Water Quality Certification conditions, would reduce the incremental effects such that there would be minimal effects on steelhead trout. Avoiding dredging during peak salmonid outmigration periods would minimize the short-term effects of the proposed action on steelhead trout (although a few could be present in the estuary at any time of the year). The proposed dredging

would be conducted between October 16 and February 14. Dredging during peak juvenile salmon migration months between February 15 and July 15 (or as designated by NOAA Fisheries, USFWS, or WDFW) would thus be avoided. This timing would avoid noise impacts to most juvenile steelhead.

The principal water quality impact of dredging is increased suspended solids concentrations in waters near the dredging site. The effects of dredging on water quality can occur at the site of dredging and transfer to the barge and barge overflow or decant water discharge. Dredging for this project would be accomplished with a clamshell dredge in FY 2004 (which it was) where sediments may be resuspended into the water column through lowering of the clamshell bucket, impacting the bottom with the bucket, closing the bucket, raising the bucket through the water column, and depositing sediments onto the haul barge. In FY 2005, and in subsequent years, dredging could be accomplished with hydraulic pipeline dredge to allow for direct placement of material at upland sites (planned in 2007). Sediments would be temporarily resuspended into the water column by the cutterhead/water jets used to break up the sediment surface prior to suctioning through a large hose for placement at the designated upland site.

These effects are all temporary and localized. They are limited in time to periods outside the migration period for juvenile steelhead, and are limited in space to the immediate vicinity of dredging activities.

Temporary effects on water quality and salmonids would also be minimized by adherence to all permit conditions and by additional measures, which are detailed below:

- (1) Dredging would be done with a clamshell dredge, and would be carried out in a manner that minimizes spillage of excess sediments from the bucket and minimizes entrainment of fish.
- (2) Barges used to transport the dredged material to the disposal or transfer sites would not be filled beyond their capacity to completely contain the dredged material.
- (3) Disposal operations and material effects would be in conformance with PSDDA management standards.
- (4) Other conditions as may be included in the Section 401 Certification issued by the Washington State Department of Ecology (WDOE) for this project.
- (5) Dredging would be carried out in compliance with permits issued by the responsible regulatory agencies. These permits may include additional conditions to protect water quality.

As steelhead are less dependent on nearshore habitat and have a briefer estuarine residency than Chinook salmon, this species will be less affected by both the negative and positive aspects of each project component. Based on the above information the Corps has determined that dredging the turning basin and federal navigation channel in the Snohomish River during October through February “may affect, but not likely to adversely affect” Puget Sound Steelhead.

6.0 MITIGATION.

As discussed in the 2004 EA, dredging will only occur during the period between October 16 and February 14 to avoid peak juvenile salmon migration periods. Impacts from the placement of dredged materials at Parcel O will be minimized through directed discharge points and sampling of return water to ensure that total suspended solids and dissolved oxygen do not exceed the State water quality standards.

Mitigation for the loss of 1.71 acres of low quality wetlands will involve the improvement of functions and values of a portion of the 200-foot shoreline buffer of the Snohomish River and the wetland buffer of the Aeration Cell wetland at the City's wastewater treatment facility on Smith Island across from the project site (Hart Crowser-Pentec, 2007c). Specifically, two mitigation sites, labeled Site 1 and Site 2, have been identified (Figure 3), with Site 1 adjacent to the Aeration Cell. Due to dominance of invasive species and limited vegetation in areas, the proposed mitigation sites currently provide a low level of habitat functions and values (Hart Crowser-Pentec, 2007c). The planned habitat enhancement at these two sites will include removal of Himalayan blackberry and Scot's broom followed by the installation of native trees and shrubs.

While the planned mitigation measures do not provide for direct wetland compensation, the buffer and habitat enhancements do provide excellent compensation for lost habitat functions at the impact site. Impact site wetlands A, B, C, and D are low-quality wetlands that developed on previously placed dredged material as part of regular and ongoing maintenance by the Corps. The mitigation will significantly improve the wetland and shoreline buffer functions and values within the degraded mitigation sites 1 and 2. Buffer and habitat improvements will also improve functions and values provided by the Aeration Cell wetland and adjacent habitats by increasing vegetative diversity through installation of native fruit and nut bearing plants, improving existing habitat for birds, amphibians and mammals.

Specific goals and performance standards, maintenance and contingency procedures, a monitoring schedule and performance bond are discussed in detail in the wetland mitigation plan (Hart Crowser-Pentec, 2007c). Primary goals are: (a) survival of planted native trees and shrubs will be at a minimum of 80 percent after 5 years, (b) aerial coverage of native trees and shrubs will be at a minimum of 80 percent after 5 years and (c) invasive plant areal coverage will be less than 20 percent after 5 years. Monitoring by a mitigation specialist will occur at post-construction at years 0, 1, 3 and 5.



Figure 3. Planned vegetative mitigation areas across the river from Parcel O.

7.0 COMPLIANCE WITH ENVIRONMENTAL REGULATIONS.

The disposal at Parcel O and subsequent return of settled water to the river will be in compliance with the Section 401 water quality certification issued the Corps by Ecology in 2004. According to Ecology, no amendment to this certification is required (Pressley, 2007). Ecology also concurred with the Corps' 2005 determination that disposal of dredged material at Parcel O is consistent to the maximum extent practicable with the Washington State Coastal Zone Management Program. Regarding the State of Washington's Shoreline Management Program, the Port of Everett has secured the shoreline permit for deposition of sediment at Parcel O. A Section 404 (b)(1) evaluation supplement has been prepared to evaluate the water quality impacts of return water discharged from the Parcel O site (Appendix B).

The project is in compliance with Section 7 of the Endangered Species Act. A biological assessment prepared in 2004 and supplemented in 2006 indicated that dredging and disposal operations from FY 2005-2009, in general, would not be likely to affect listed species.

In recent correspondence with the National Marine Fisheries Service (NMFS) dated September 7, 2007, the Corps indicated that Section 7 consultation for Snohomish River dredging was completed with a NMFS concurrence letter dated June 19, 2006. However Puget Sound steelhead (*Oncorhynchus mykiss*) was listed as threatened in May 11, 2007 (effective June 11, 2007) and as it was not addressed in the earlier consultation, the Corps requested reinitiation of Section 7 consultation. An analysis of potential effects to steelhead from routine maintenance dredging and disposal in the Snohomish River was prepared by the Corps in September 2007, with the determination that the planned operations will only result in discountable and insignificant effects to steelhead and are therefore "not likely to adversely affect" Puget Sound steelhead. NMFS concurred with this determination in September 28, 2007.

In a separate correspondence, dated September 17, 2007, the Corps indicated to NMFS that dredged material will be placed at the Parcel O upland site and requested reinitiation of Section 7 consultation for the upland disposal. In September 2007, the Port of Everett's contractor prepared an analysis of potential effects to listed species under the jurisdiction of NMFS that could be impacted by this project (Hart Crowser-Pentec, 2007). The Corps adopted this analysis and made the determination that these disposal actions will result in discountable and insignificant effects to Puget Sound Chinook salmon and Puget Sound steelhead and are therefore "not likely to adversely affect" these species. The analysis also determined that the project will have no effect on southern resident killer whales or Steller's sea lions. Further, it is not likely to adversely affect designated critical habitat for the southern resident killer whale. Finally, the project is not likely to adversely affect essential fish habitat under the Magnuson-Stevens Act. NMFS concurred with this determination in the same letter to the Corps referenced above, dated September 28, 2007 (Appendix C).

In a correspondence with the US Fish and Wildlife Service (USFWS) dated September 17, 2007, the Corps indicated that previous Section 7 consultation for maintenance dredging in the lower Snohomish River and disposal at various upland and inwater sites was completed with the

USFWS concurrence letter dated August 31, 2005. The 2007 correspondence requested reinitiation of Section 7 consultation for the planned disposal at the Parcel O site.

In August 2007, the Port of Everett's contractor prepared an analysis of potential effects to listed species under the jurisdiction of USFWS that could be impacted by this project. The Corps adopted this analysis and made the determination that the planned disposal operations will only result in discountable and insignificant effects to coastal/Puget Sound bull trout and marbled murrelet and are therefore "not likely to adversely affect" these species and also are "not likely to adversely affect" designated critical habitat for bull trout. By correspondence of October 23, 2007, the USFWS concurred with these determinations (Appendix C).

8.0 CONCLUSION.

Based on this second supplement to the environmental assessment and on coordination with Federal and state agencies, this project is not a major Federal action significantly affecting the quality of the human environment and therefore does not require preparation of a Federal environmental impact statement.

9.0 PUBLIC REVIEW AND COMMENTS.

A public notice of preparation (NOP) of this Supplement No. 2 to the 2004 Environmental Assessment was distributed on 22 August 2007 (Appendix C). The NOP requested comments on the effects of the planned upland disposal at Parcel O, and the effects of dredging and disposal on the newly listed steelhead, that would be taken into consideration in preparing the supplement. Only one comment was received, that from USFWS stating that they had no comment on the NOP and that they would address endangered species issues separately through the Section 7 process.

10.0 REFERENCES.

- Army Corps of Engineers. 2004. Final Environmental Assessment. FY2005-2009 Maintenance Dredging, Snohomish River Navigation Channel, Downstream and Upstream Settling Basins, Everett, Washington. 81 pages. USACE, Seattle District, September 2004.
- Hart Crowser-Pentec Environmental, 2007a. Critical Areas Report – Wetlands. City of Everett Property at Railway Avenue, Everett, Washington. Prepared for City of Everett and Port of Everett. 10 pages + appendixes. July, 2007.
- Hart Crowser-Pentec Environmental, 2007b. Biological Evaluation, Upper Settling Basin, Sediment Disposal Project. Everett, Washington. Prepared for Port of Everett. 38 pages + appendixes. August, 2007.
- Hart Crowser-Pentec Environmental, 2007c. Wetland Mitigation Plan, City of Everett Property at Railway Avenue. Everett, Washington. Prepared for City of Everett and Port of Everett. 14 pages + appendixes. July, 2007.

Hruby, T., 2004. Washington State Wetland Rating System for Western Washington – Revised. Washington State Department of Ecology, Publication 04-06-025.

Pressley, Helen, 2007. E-mail and telephone personal communications, October 3, 2007.

11.0 APPENDIXES.

APPENDIX A. Notice of Preparation of Supplement Number Two to the Environmental Assessment, August 22, 2007.

APPENDIX B. Supplement to Substantive Compliance with Section 404 of the Clean Water Act

APPENDIX C. National Marine Fisheries Service and U.S. Fish and Wildlife Service
Endangered Species Act Correspondence

APPENDIX D. Public Notice CENWS OD-TS-NS-22

APPENDIX A

Notice of Preparation for Supplement No. 2 to the Environmental Assessment

APPENDIX B

Supplement to Substantive Compliance with Section 404 of the Clean Water Act

APPENDIX C

National Marine Fisheries Service and U.S. Fish and Wildlife Service

Endangered Species Act Correspondence

APPENDIX D

Public Notice

CENWS OD-TS-NS-22